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मानक

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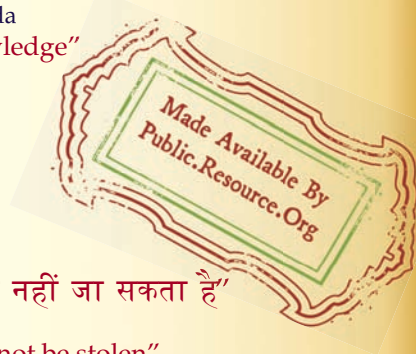
IS/IEC 61196-1-206 (2005): Coaxial communication cables
Part 1-206 Environmental test methods – Climatic sequence
[PGD 1: Basic Standards]



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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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Indian Standard
COAXIAL COMMUNICATION CABLES
PART 1-206 ENVIRONMENTAL TEST METHODS — CLIMATIC SEQUENCE

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NATIONAL FOREWORD

This Indian Standard (Part 1-206) which is identical with IEC 61196-1-206 : 2005 'Coaxial communication cables — Part 1-206: Environmental test methods — Climatic sequence' issued by the International Electrotechnical Commission (IEC) was adopted by the Bureau of Indian Standards on the recommendation of the Wires, Cables, Waveguides and Accessories Sectional Committee and approval of the Electronics and Information Technology Division Council.

The text of IEC Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

- a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.
- b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to the following International Standards for which Indian Standards also exist. The corresponding Indian Standards which are to be substituted in their respective places are listed below along with their degree of equivalence for the editions indicated:

<i>International Standard</i>	<i>Corresponding Indian Standard</i>	<i>Degree of Equivalence</i>
IEC 60068-2-14 : 1984 Basic environmental testing procedures — Part 2: Tests — Test N: Change of temperature	IS 9000 (Part 14/Sec 1 to 3) : 1988 Basic environmental testing procedures for electronic and electrical items: Part 14 Test N: Change of temperature (<i>first revision</i>)	Technically Equivalent
IEC 61196-1 : 2005 Coaxial communication cables — Part 1: Generic specification — General, definitions and requirements	IS/IEC 61196 (Part 1) : 2005 Coaxial communication cables: Part 1 Generic specification — General, definitions and requirements	Identical

Only English language text has been retained while adopting it in this Indian Standard, and as such the page numbers given here are not the same as in the IEC Standard.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

COAXIAL COMMUNICATION CABLES

PART 1-206 ENVIRONMENTAL TEST METHODS — CLIMATIC SEQUENCE

1 Scope

This part of IEC 61196 describes the method of test to determine the stability of transmission performance of a finished cable used in analogue and digital communication systems when submitted to temperature changes which may occur during use, storage or transportation.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60068-2-14: 1984, *Basic environmental testing procedures – Part 2: Tests – Test N: Change of temperature*

IEC 61196-1:2005, *Coaxial communication cables – Part 1: Generic specification – General, definitions and requirements*

3 Terms and definitions

For the purposes of this document, the definitions given in IEC 61196-1 apply.

4 Test method

The equipment for the test method is as follows:

- a) appropriate transmission measuring apparatus for determination of changes in transmission performance;
- b) climatic chamber.

The climatic chamber shall be of a suitable size to accommodate the cable under test (CUT), and its temperature shall be controlled to remain within ± 2 °C of the specified test temperature. One example of a suitable chamber is given in Clause 2, test Nb, of IEC 60068-2-14.

5 Test sample

The length of the CUT shall be of sufficient length as indicated in the sectional or the detail specification to achieve the desired accuracy.

In order to gain reproducible values, it may be necessary for the CUT to be brought into the climatic chamber as a loose coil or on a reel, depending on the installation practice.

General recommendations are as follows.

- The winding diameter shall be large enough to maintain the ability of the CUT to accommodate differential expansion and contraction. A winding diameter substantially greater than the value selected for cable delivery may be necessary.
- Any risk of cable expansion (or contraction) limitation created by conditioning shall be suppressed. In particular special care should be taken to avoid residual tension on the CUT.
- The use of loose winding is recommended such as large diameter coils, cushioned reels with a soft layer of zero tension facility device, etc.

6 Procedure

6.1 Initial measurement

The CUT shall be visually inspected and a basic value for the transmission parameters at the initial temperature shall be determined.

Pre-conditioning conditions shall be agreed between customer and supplier.

6.2 Cycling

The following test sequence shall be achieved.

- a) The CUT at ambient temperature shall be introduced into the climatic chamber that is at the same temperature.
- b) The temperature in the chamber shall then be lowered to the appropriate low temperature T_A at the appropriate rate of cooling.
- c) After temperature stability in the chamber has been reached, the CUT shall be exposed to the low temperature conditions for the appropriate period t_1 .
- d) The temperature in the chamber shall then be raised to the appropriate high temperature T_B at the appropriate rate of heating.
- e) After temperature stability in the chamber has been reached, the CUT shall be exposed to the high temperature conditions for the appropriate period t_1 .
- f) The temperature in the chamber shall then be lowered to the ambient temperature at the appropriate rate of cooling.
- g) This procedure constitutes one cycle (see Figure 1).
- h) The CUT shall be subjected to two cycles unless otherwise required in the relevant detailed specification.

- i) Before removal from the chamber, the CUT shall have reached temperature stability at ambient temperature.
- j) If the relevant detailed specification indicates different temperature ranges for storage and use, instead of two separate tests, a combined test procedure is allowed in accordance with Figure 2.

6.3 Recovery

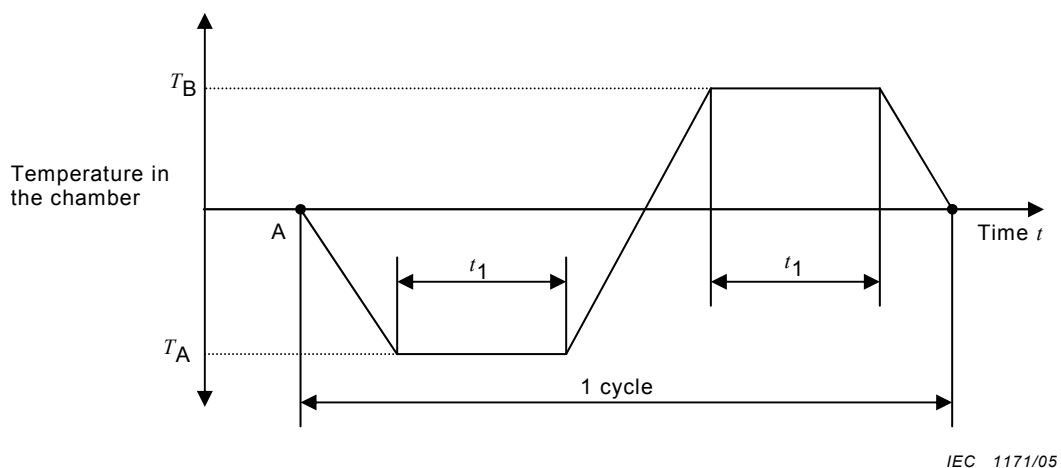
If the ambient temperature is not the standard atmospheric condition to be used for testing after removal from the chamber, the CUT shall be allowed to attain temperature stability at this latter condition.

The relevant detailed specification may call for a specific recovery period for a given type of sample.

6.4 Details to be specified

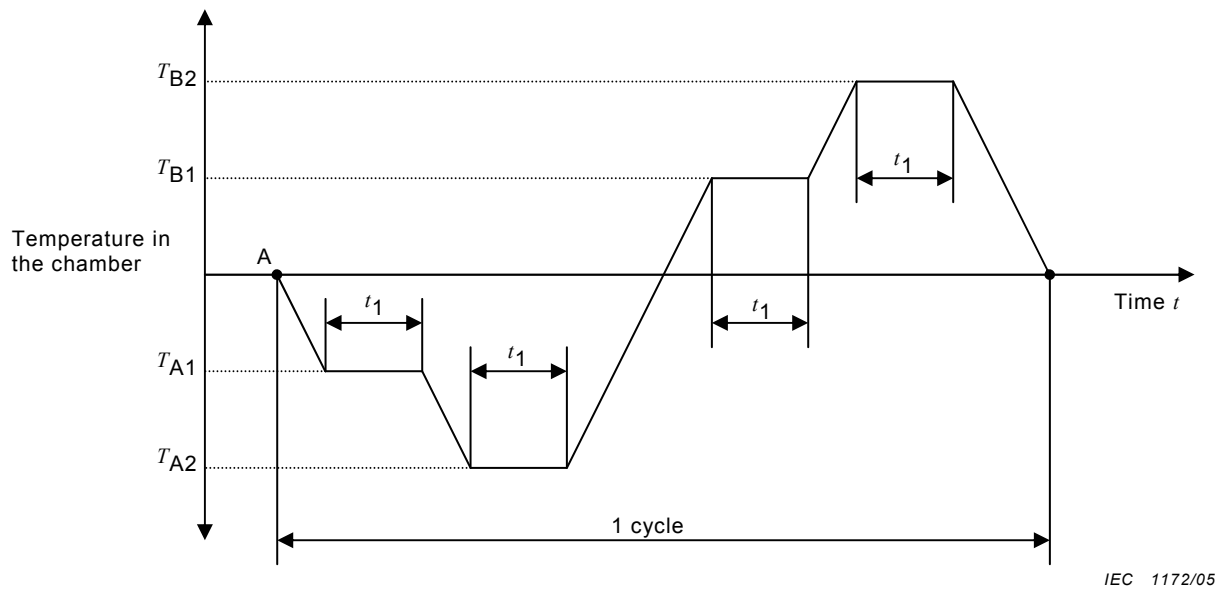
The following details shall be specified in the relevant sectional or detail specification.

- The permissible change of transmission parameter and inspection checks during cycling.
- The transmission parameters to be measured.
- The values of T_A , T_B and t_1 and the rate of cooling or heating.
- The number of cycles.
- The humidity levels at each temperature extreme (if any).
- The recovery period.



A Start of first cycle

Figure 1 – One-cycle procedure



A Start of first cycle

Figure 2 – Combined test procedure

7 Test report

The test report shall include

- the period(s) at which inspection checks are carried out;
- the cable sample length;
- the type of winding;
- the coil, reel, other (to be stated, in the case of a cushioned reel, the type of cushioning and material used);
- the winding diameter;
- single or multilayer winding;
- the winding tension and zero tension facility device (if any);
- the type of measurement equipment;
- the temperature cycle diagram;
- the change of transmission parameters as a function of temperature cycling;
- the pass/fail criteria.

8 Requirements

The acceptance criteria for the test shall be as required in the relevant detailed specification.

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Amendments Issued Since Publication

Amendment No.	Date of Issue	Text Affected

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